

We claim:

1. A communication method for an ESL system utilizing frames divided into a plurality of timeslots, the method comprising the steps of:
  - (a) transmitting a find message to an ESL by a host computer, said find message transmitted by a plurality of CBSs utilizing all of the timeslots of a frame;
  - (b) logging which CBS or CBSs received the response and logging the timeslot in which the response was received;
  - (c) determining a new CBS assignment and a new timeslot assignment for the ESL;
  - (d) transmitting an assign command to the ESL utilizing the timeslot in which the response was received instructing the ESL to listen for messages on the new timeslot.
2. The method of claim 1 further comprising the step of:
  - (e) updating an ESL data file with the new CBS assignment and new timeslot assignment information.
3. The method of claim 2 wherein step (a) was initiated as a result of the ESL not responding to a message, and the method further comprises the step of:
  - (f) retransmitting the message to the ESL utilizing the new CBS and the new timeslot.
4. The method of claim 1 wherein step (a) further comprises the substep of:  
sending a command from an ESL manager software module to a CBS manager software module instructing the CBS manager software to transmit the find message.
5. The method of claim 1 wherein step (c) further comprises the substep of:  
if the response to the find message is received by more than one CBS, identifying which CBS received the response with the strongest signal strength, and identifying which CBS currently has the least ESL assignments.

6. The method of claim 5 wherein step (c) further comprises the substep of:

if the response to the find message is received by more than one CBS, assigning the ESL to the CBS which received the response with the strongest signal strength.

7. The method of claim 5 wherein step (c) further comprises the substep of:

if the response to the find message is received by more than one CBS, assigning the ESL to the CBS which currently has the least ESL assignments.

8. An electronic shelf label (ESL) system comprising:

an ESL for displaying information,

a plurality of communication base stations (CBSs) communicatively connected to a host computer;

a host computer for initiating transmission of a find message to the ESL, said find message transmitted by the plurality of CBSs utilizing all of the timeslots of a frame, logging which CBS or CBSs received the response and logging the timeslot in which the response was received, determining a new CBS assignment and a new timeslot assignment for the ESL, and transmitting an assign command to the ESL utilizing the timeslot in which the response was received instructing the ESL to listen for messages on the new timeslot.

9. The system of claim 8 wherein the host computer updates an ESL data file with the new CBS assignment and new timeslot assignment information.

10. The system of claim 9 wherein the transmission of the find message was initiated as a result of the ESL not responding to a message, and the host computer is further for retransmitting the message to the ESL utilizing the new CBS and the new timeslot.

11. The system of claim 8 wherein the host computer includes an ESL manager and a CBS manager, wherein the ESL manager sends a command to a CBS manager software module instructing the CBS manager software to transmit the find message.

12. The system of claim 8 wherein, if the response to the find message is received by more than one CBS, the host computer identifies which CBS received the response with the strongest signal strength, and identifies which CBS currently has the least ESL assignments.

13. The system of claim 12 wherein, if the response to the find message is received by more than one CBS, the host computer assigns the ESL to the CBS which received the response with the strongest signal strength.

14. The system of claim 12 wherein, if the response to the find message is received by more than one CBS, the host computer assigns the ESL to the CBS which currently has the least ESL assignments.

15. An ESL update method to allow for ESL relocation in a retail establishment including an ESL system utilizing frames divided into a plurality of timeslots, the method comprising the steps of:

- (a) relocating an ESL and items associated with the ESL from a first location in a retail establishment to a second location in the retail establishment;
- (b) transmitting a message to the ESL by a host computer, said message transmitted by one of a plurality of communication base stations (CBSs) utilizing one of the timeslots of a frame, said CBS currently assigned to the ESL;
- (c) waiting for a response to the message;
- (c) if no response is received by the host computer, transmitting a find message, said find message transmitted by all of the plurality of CBSs utilizing all of the timeslots of a frame;

(d) logging which CBS or CBSs received a response to the find message and logging the timeslot in which the response to the find message was received;

(e) determining a new CBS assignment and a new timeslot assignment for the ESL; and

(f) transmitting an assign command to the ESL utilizing the timeslot in which the response was received instructing the ESL to listen for messages on the new timeslot.

16. The method of claim 15 wherein the step of relocating the ESL removed the ESL from within communication range of the currently assigned CBS.